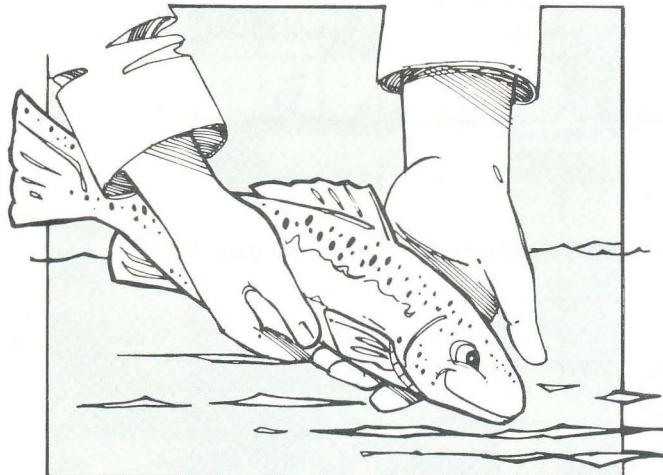




Pennsylvania Fish Commission

Summer 1984

PUT 'EM BACK ALIVE!

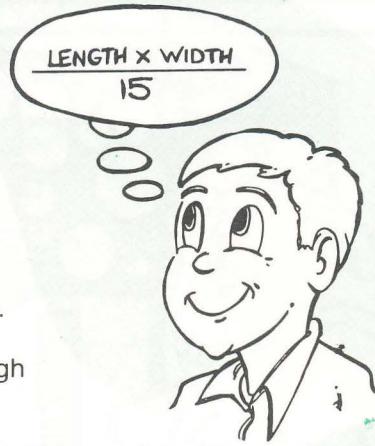


If you are not going to eat the fish you catch and want to return it to the water, here are some helpful hints to see that your fish has its best chance to survive.

1. **TIME IS IMPORTANT.** Play and release the fish quickly. Do not make the fish struggle until it is exhausted.
2. **KEEP THE FISH IN WATER** As much as possible when removing the hook. A fish suffocates out of water and can be brain damaged if kept out too long. Also outside of water the fish is many times heavier and could fatally injure itself by flopping around on ground or rocks.
3. **BE GENTLE.** Do not squeeze the fish. Keep fingers out of gills. Small mesh nets are helpful if they do not get entangled in the gills.
4. **REMOVE HOOK GENTLY AND RAPIDLY.** If the fish is hooked deeply, snip the leader close to the fish's mouth and release it.
5. **RELEASE FISH GENTLY.** Don't throw it into the water. Gently lower it into the water and let it swim away. You can revive a tired fish by gently moving the fish forward and backward forcing water through its gills.

CAPACITY PLATES

One of the most popular recreational activities in the summer is boating. Without doubt, boating can be a very satisfying experience, but it can also be disastrous. Following the safety guidelines that you learn through PLAY will help you enjoy your boating activities more and more.



Many people think that boating accidents only happen when two boats collide or a boat hits something else. Reports from the National Transportation Safety Board tell us that 90% of all boating deaths occur because the victims drown.

There are several reasons why a boater could drown. Some people fall over the side of their boat when they stand up and lose their balance. Some people are reckless in their boats and cause their boats to tip over because they are moving around too much. Some people just don't know how to handle their boats and cause the boat to tip over. Some people end up in the water without planning because they try to carry more people and equipment than their boat can safely handle.

All new boats sold since 1972 are equipped with a capacity plate installed by the manufacturer. Capacity plates give the maximum load and horsepower rating. Pennsylvania law requires that all boats sold or transferred must have a capacity plate — even if the boat was originally bought before 1972. If a boat does not have a capacity plate, a boat owner can get one by writing to the Pennsylvania Fish Commission, Bureau of Waterways, P.O. Box 1673, Harrisburg, PA 17105-1673. The only exception to capacity plate requirements are sailboats, canoes, kayaks, rubber rafts, pontoon boats and any other boats of unusual design. Capacity plates must be placed in a position that is in full view of the boat operator.

If your boat has no capacity plate, or if you are curious about how many people you can bring aboard your boat without creating a dangerous situation, here is a simple formula that you can use to estimate the number of people your boat will safely carry:

$$\frac{\text{Length} \times \text{Width}}{15}$$

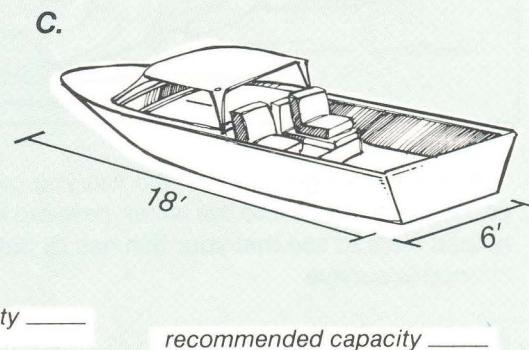
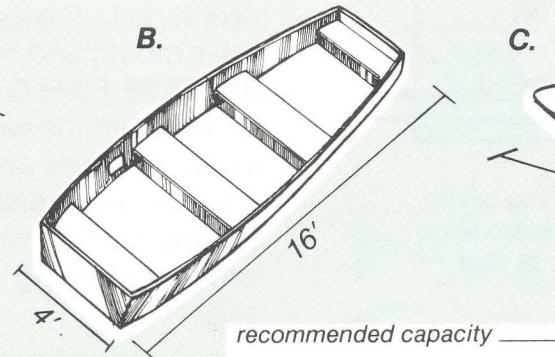
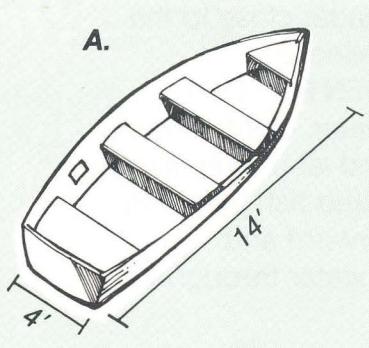
This formula was designed using 150 pounds as the average weight per person. If you have a situation in which you are planning to have adults and small children on the boat, you will have to adjust the results of the formula.

EXAMPLE:

If a john boat is 12' long and 4' wide, the recommended capacity is 3 people.

$$\frac{12' \times 4'}{15} = \frac{48}{15} = 3.2$$

Here are some problems for you to figure out. You will find three different boats. See if you can figure out the estimated capacity load for each boat.



recommended capacity _____

Answers may be found below "Match the Hatch"

LAMPREYS

CREATURES FROM THE PAST

Lampreys are among Pennsylvania's most ancient creatures. In fact, the lampreys living in Pennsylvania today are nearly identical to lampreys that died here and were preserved as fossils over 300 million years ago. This may be why lampreys seem strange compared to more modern fish.

Actually, scientists don't call lampreys true fish. Fish have paired fins, a bony skeleton and jaws. Lampreys have none of these. A lamprey's long slender body has just one fin running down the back and around the tail. The skeleton is made of rubber-like cartilage, not bone, and the only clue that a lamprey has gills is a set of seven "portholes" on either side of its head. But the strangest part of a lamprey is its mouth. Instead of upper and lower jaws, a lamprey has a round mouth that looks like a suction-cup.

The mouth tells a lot about a lamprey. Each of the 6 lamprey species found in Pennsylvania has a unique tooth pattern. If the teeth are large and look sharp, the lamprey is probably parasitic. If the teeth are very small the lamprey is non-parasitic, and never eats as an adult.

The mouth also tells a lamprey's age. A young lamprey, called an "ammocoete", has a funnel-shaped hood of skin around its mouth. This hood helps the ammocoete suck in water which the lamprey filters for bacteria, silt and other food particles. The hood disappears when a lamprey matures.

Adult lampreys may live in either saltwater, the Atlantic Ocean for example, or in fresh waters such as the Allegheny River or Lake Erie. But wherever lampreys live as adults, they begin life in freshwater streams, and they must return there to spawn.

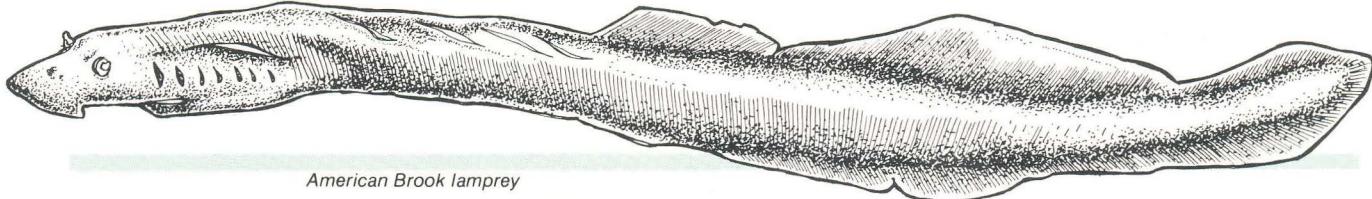
Lampreys build shallow nests in gravel riffles of streams. A nest may be shared by several pairs of lampreys. Immediately after spawning, the adults die. Their fertilized eggs, however, settle into the gravel which protects them from hungry predators until the ammocoetes hatch and drift downstream.

An ammocoete is blind and toothless. It lives in slow water, where it buries most of its body in silt. The ammocoete leaves its head uncovered, so it can filter food from the current. Ammocoetes may spend from one to several years as filter-feeders, but eventually they change to adult form.

As adults, lampreys may or may not eat. Four species of lampreys in Pennsylvania do not feed as adults: The Northern brook lamprey, the mountain brook lamprey, the least brook lamprey, and the American brook lamprey. Soon after these nonparasitic lampreys mature, they migrate upstream, mate, and then die.

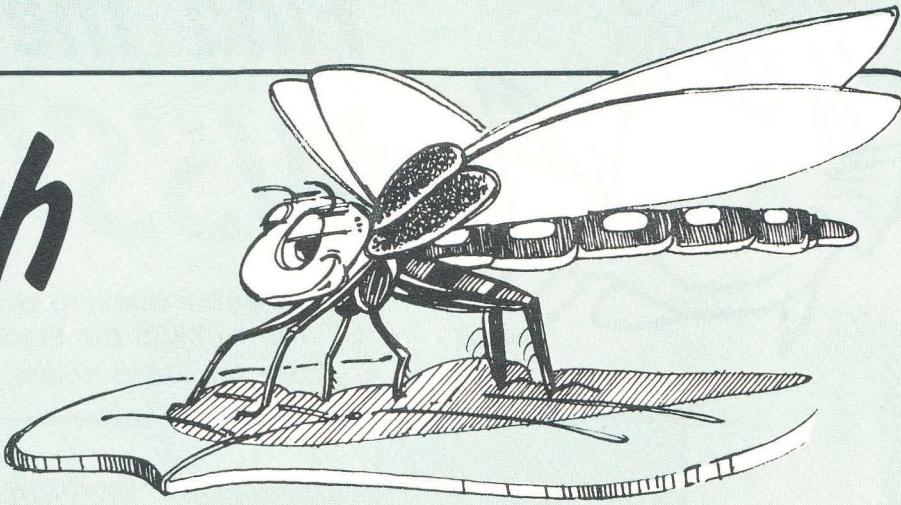
If lampreys do feed, it is by parasitizing fish. A parasitic lamprey clamps its suction-cup mouth against a fish and rasps away the host's scales and flesh using a horny tongue. The lamprey sucks blood and body juices from the wound, but this doesn't always kill the fish.

Two parasitic species have been found in Pennsylvania: The Ohio lamprey and the sea lamprey. These lampreys migrate downstream, as adults, to an ocean, lake or large river where they prey on fish for about a year before they migrate back upstream to spawn and die. The Ohio lamprey is common in the Allegheny River and the Ohio drainage where it feeds on smallmouth bass and walleye. The Sea lamprey, which invaded the upper Great Lakes in the 1920's, has had a drastic effect on commercial fishing in some of the Great Lakes. Luckily it never became abundant in Lake Erie, probably because the streams entering Erie lack good habitat for lamprey spawning.



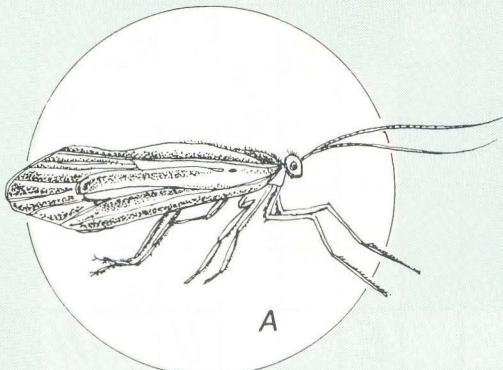
American Brook lamprey

✓ Match the Hatch



In your fishing adventures you often see insects flying close to the surface of the water. Many of these are eaten by fish when they land on the water or rise to its top after hatching below. Many trout fishermen tie artificial flies to copy insects that exist in nature.

See if you can "Match the Hatch" by identifying the flies shown on this page.



STONEFLY _____

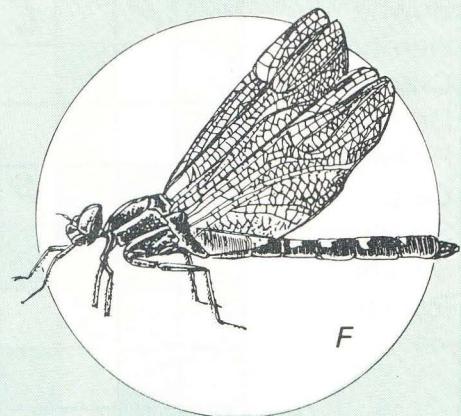
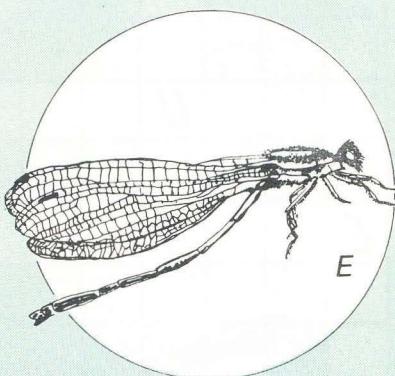
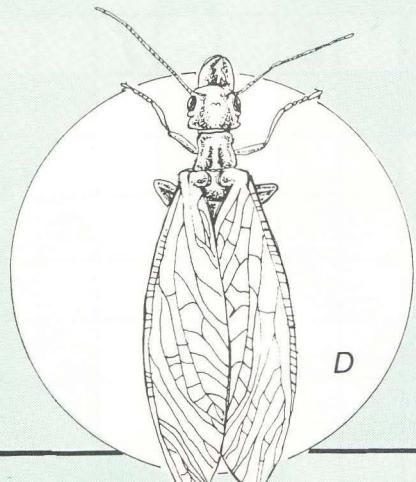
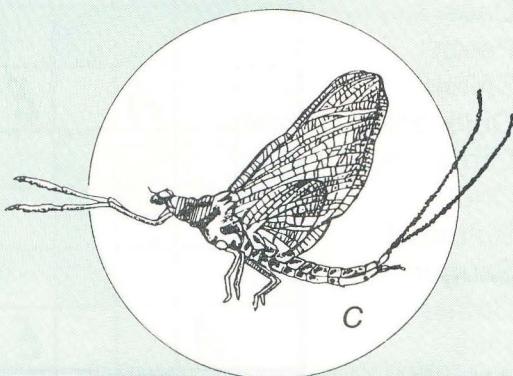
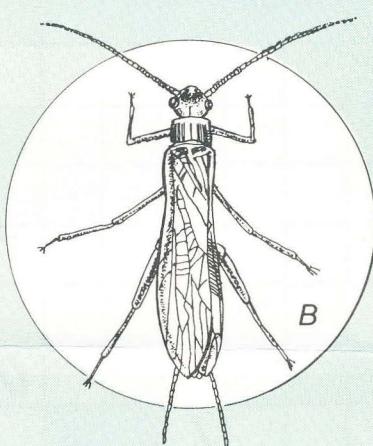
MAYFLY —

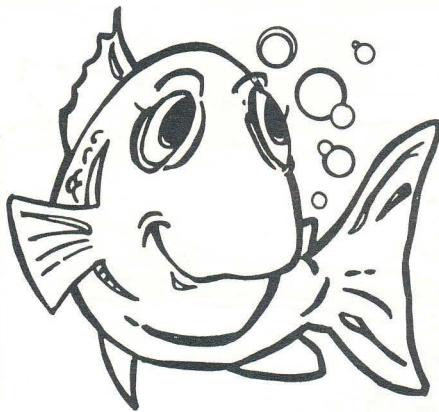
DRAGONFLY

DAMSELFLY

CADDISFLY

DOBSONFLY

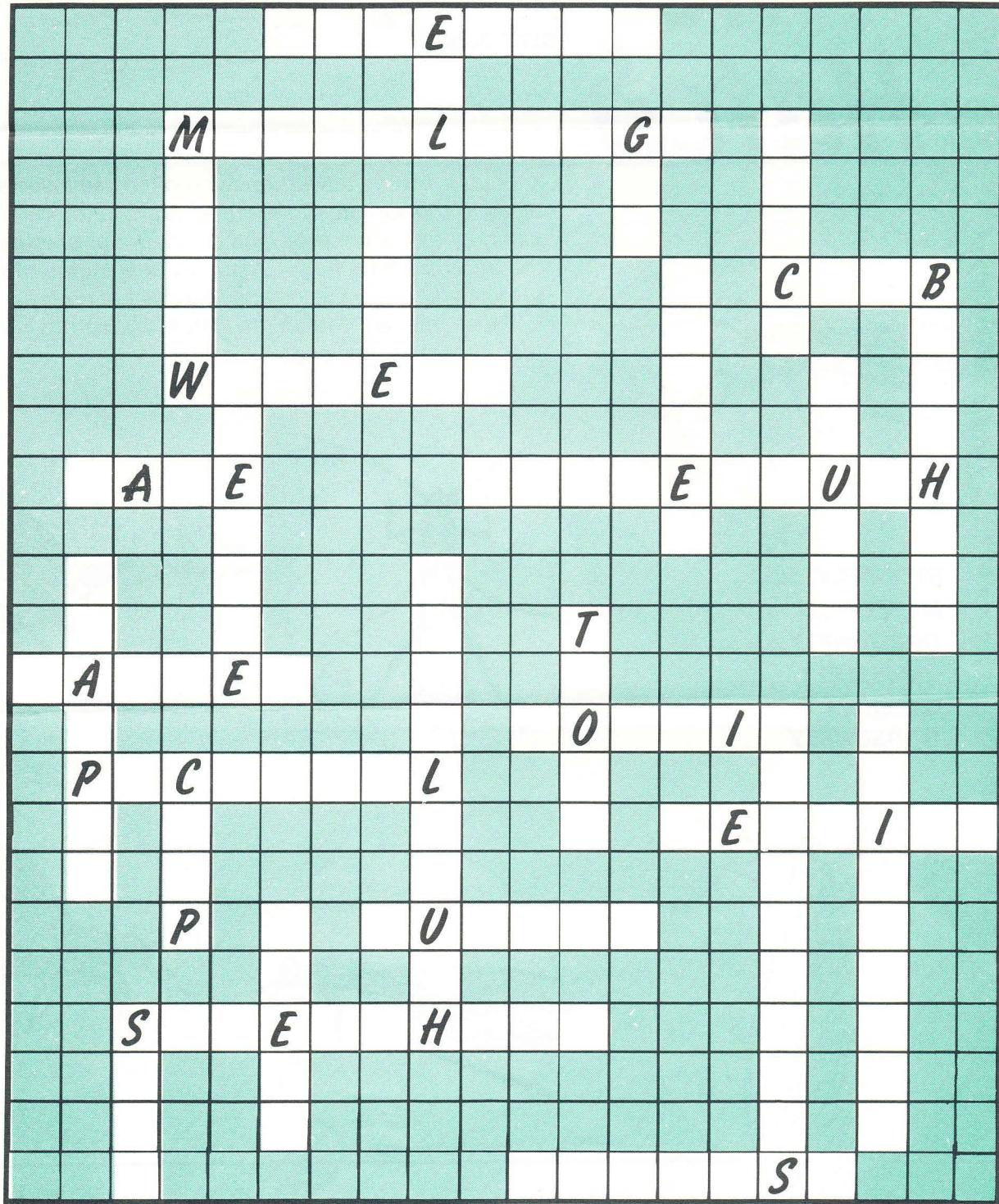




Find the **MISSING FISH**

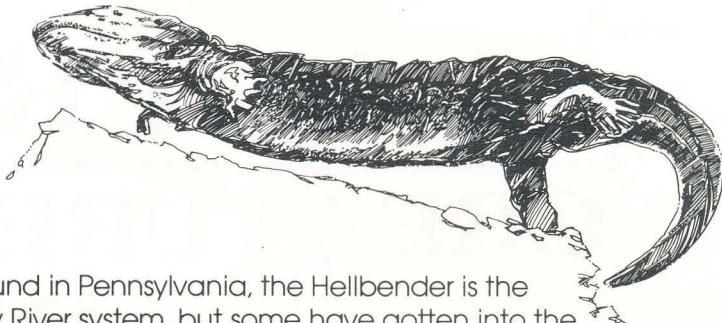
Use your spelling skills and knowledge of Pennsylvania fish to fill in the blanks in the quiz below. The fish to use are listed below.

Smelt
Bluegill
Muskrat
Eel
Shad
Minnow
Sheepshead
Gar
Walleye
Dace
Perch
Shiner
Quillback
Largemouth
Chub
Bullhead
Sauger
Catfish
Pike
Alewife
Trout
Bowfin
Herring
Crappie
Darter
Pickerel
Carp
Smallmouth
Sucker
Rockbass



The **HELLBENDER-**

Pennsylvania's Biggest Salamander



Of the 22 species of salamanders found in Pennsylvania, the Hellbender is the largest. It is found mostly in the Allegheny River system, but some have gotten into the Susquehanna. It is completely harmless, but its wrinkly appearance has led some anglers to cut their lines rather than touch them. It likes to eat crayfish and will sometimes eat dead fish. It can grow to be over 20 inches long. But a close cousin, the giant salamander of Asia can reach 5 feet in length!

**YOU
CAN JOIN
PLAY
NOW!**

PLAY

(Pennsylvania League of Angling Youth) is an educational program specifically designed to reach youngsters. Members receive a colorful sew-on jacket patch, a quarterly newsletter, special Fish Commission publications and access to the PLAY Correspondence Center.

Enclosed is \$2.00 (check or money order). Please enroll me in PLAY

Name _____

Street _____

City _____ *State* _____ *Zip* _____
Send to **PLAY**, Pennsylvania Fish Commission, P.O. Box 1673, Harrisburg, PA 17105-1673.

Pennsylvania League of Angling Youth

PENNSYLVANIA FISH COMMISSION

P.O. Box 1673

Harrisburg, PA 17105-1673